experimental, but the cost of the coloured plate in the frontispiece, presumably an advertisement of the publishers, would have been better expended in illustrating such pathological changes as are known in the explanation of mental disease. The bibliography at the end of each chapter is valuable, and the index is well compiled. We hope to see published at an early date a second edition of this valuable text-book.

British Mammals.

British Mammals. Written and illustrated by A. Thorburn. (In two vols.) Vol. 2. Pp. vi + 108 + plates 26–50. (London: Longmans, Green and Co., 1921.) 10*l.* 10*s.* net (2 vols.).

IT is somewhat unfortunate that seals, whales, and bats constitute so large a proportion of our mammals, for the public, after all, take a lively interest only in such creatures as come under their notice. Including sub-species, there are roughly eighty in all, of which twenty-eight are sea creatures, mostly rare and generally thrown up on our coasts in a decomposing condition, whilst the bats, which number twelve, being crepuscular or nocturnal in their habits, are also known to few. When we add to this total the rats, mice, and voles, for the most part shy and elusive inhabitants of the earth, the total number of British mammals that come under the notice even of the most observant country dwellers is remarkably small.

In his second volume Mr. Thorburn treats his subject with the same care and attention to detail that he gave to us in volume one. Even when the subject is somewhat dull he succeeds in making an interesting feature of it by means of skilfully introduced natural features or landscape. We cannot say, however, that in the present volume he is equally at home in depicting deer or the so-called wild cattle as he is with the small rodents or Cetaceæ. The mountain hare is good, but the common hare is stiff and inartistic. Of all our mammals it is the most difficult to draw, and in this case the artist has failed to reproduce it in one of its more favourable attitudes. Nor are we enamoured of the pen drawings; they fall far behind the brush work, and being reproduced on pure rag-paper lose much of their original delicacy. In his coloured plates of mice and voles Mr. Thorburn is at his best, and that is saying a great deal, for it is evident he has drawn the majority of these from life, and has given us all their sleek beauty and rotundity. Here his art is triumphant, which is to say it is entirely satisfactory. Such work will live and hold its own, and take high place among works on British birds and beasts. Mr. Thorburn, too, has achieved a notable success in his representations of the British Cetaceæ, difficult subjects either to render accurately or to make interesting. We notice few errors, with the exception that the teeth of the sperm whale are too small and too white, while the head and flippers of the hump-backed whale are scarcely long enough.

The letterpress gives a short and on the whole very accurate account of all the species of rodents, ungulates, and whales. The author describes each species from careful research in standard works, supplemented by interesting little notes from personal observation. That he is a real lover of animals is evinced on every page where he describes the intimate habits of little harvest mice and other small creatures that he has kept in confinement and allowed to escape when they have been sufficiently studied and have sat for their portraits.

The second volume of "British Mammals" is a notable achievement and worthy of Mr. Thorburn's high reputation, but it is not on a level with the first volume. The printing, both of the coloured plates and of the text illustrations, leaves much to be desired. These faults, however, cannot be attributed either to the author or his publishers, but are due to the carelessness of printers and block- and paper-makers, who, we think, do not take the same care and pride in their work as in pre-war days. J. G. M.

Plant Biochemistry.

The Chemistry of Plant Life. By Dr. R. W. Thatcher. (Agricultural and Biological Publications.) Pp. xvi + 268. (New York and London: McGraw-Hill Book Co., Inc., 1921.) 18*s.* net.

OF recent years much attention has been given to plant- or phyto-chemistry, if we may judge from the number of books which have been published on the subject. The origin of this attention can be traced to the strides that have been made in the organic chemistry of the carbohydrates, proteins, and other complex compounds, and to the development and wide general applications of physical chemistry. The purely chemical and physical details are the essential foundations for a proper understanding of the subject and for throwing new light upon the complicated chemical and physical processes going on simultaneously in life. Authors of books on plant chemistry have an advantage over their colleagues in the other branch of biochemistry—physiological or animal chemistry—in not being cumbered with a mass of

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material which may be described as traditional, and requires considerable pruning.

Dr. Thatcher's aim has been to present the chemical and physical details in an elementary manner, to point out their application in plant life, and at the same time to instil a spirit of inquiry into his readers. We think he has succeeded in his efforts. A previous acquaintance of elementary inorganic and organic chemistry is assumed, and it depends upon the depth of this acquaintance whether the student will grasp the contents. There will be no difficulty with the chapters on plant nutrients and photo-synthesis, but unless stereochemistry has been previously well learnt, the carbohydrate chapter will scarcely be understood. Herein we miss the equations for the formation of osazones. Also we can scarcely agree with the author that tannins are glucosides. Chlorophyll and plant pigments are really the most complicated in structure of plant products, and might well have formed the last chapter, instead of preceding organic acids, esters, and fats. Too little space is given to the nitrogenous constituents—a single chapter includes amines, alkaloids, purine and pyrimidine bases, and nucleic acid—while the classification of proteins is more complicated than usual.

The last third of the book deals with enzymes, colloids, and physical chemistry, mainly to show their importance in plant life. Finally there is a brief reference to hormones, auximones, vitamins, and toxins. Altogether, the book gives an excellent orientation of the subject, and much should be learned from it by the student; at any rate, he could probe further if he so desires, for references are given at the end of each chapter.

Our Bookshelf.

A History of the Cambridge University Press, 1521–1921. By S. C. Roberts. Pp. xv+190. (Cambridge: At the University Press, 1921.) 17*s*. 6*d*. net.

MR. ROBERTS's "History of the Cambridge University Press" is a very interesting account of the difficulties met with in the gradual advance from small beginnings, culminating in the highly efficient organisation of the present time. The numerous illustrations representing title-pages and the list of books published between 1521 and 1750 add much to its value.

John Siberch, otherwise John Laer of Siegburg, near Cologne, set up the first printing press in Cambridge in 1520, having settled there probably at the wish of his friend and patron, Erasmus, who in 1510 had come to live in the turret chamber of Queens' College, and to be the first teacher of Greek at the University.

There are examples of several books printed by Siberch at Cambridge in 1521. He may thus be looked upon as the founder of the Cambridge University Press. Accordingly, 1921 is the four hundredth anniversary of University printing in Cambridge.

It is not clear that John Siberch was officially recognised as printer to the University, but in 1534 King Henry VIII., by letters patent, gave licence to the chancellor, masters, and scholars to elect from time to time three stationers and printers or sellers of books, residing within the University.

The Stationers Company of London repeatedly but unsuccessfully challenged the rights thus conferred upon the University, until they were finally confirmed in a Charter granted in 1628 by Charles I.

Although it appointed printers, the press did not come directly under the control of the University until 1697, when, by a grace of the senate, the first Press Syndicate was appointed.

A Text-book of Physics. Edited by A. Wilmer Duff. Fifth edition, revised. Pp. xiv+700. (London: J. and A. Churchill, 1921.) 16*s*. net.

No sweeping changes appear to have been made in the "Text-book of Physics," edited by Prof. A. Wilmer Duff, since the last edition, referred to in NATURE of March 15, 1917, p. 41, was published. The editor states in his new preface that "students of college Physics should have some acquaintance with such new and live topics of scientific, and even popular interest" as wireless telegraphy and telephony, sound-ranging, submarine detectors, the diffraction of X-rays, the instruments used in aeroplanes, and the principle of relativity, but with the exception of the paragraphs dealing with wireless telegraphy, the information afforded by the additional matter is of little value. Many of the illustrations, particularly those showing actual apparatus, are of a sketchy type.

The Elements of Illuminating Engineering. By A. P. Trotter. (Pitman's Technical Primers.) Pp. xii+103. (London: Sir I. Pitman and Sons, Ltd., 1921.) 2*s*. 6*d*. net.

THIS booklet contains, in a revised and condensed form, much of the information conveyed in the author's well-known larger volume; some additional practical hints are also included. The initial chapter deals with laws and definitions. The effect of light on vision and the origin of glare are then briefly treated. Next Mr. Trotter passes on to a discussion of the chief sources of light, illustrating the distribution of light in each case and pointing out the fundamental principles involved in effective shading. Finally there are chapters on photometry and the planning of lighting installations. The diagrams are invariably clear and informative, and the explanations are lucid. The author has made good use of the space available, and his work will form a useful introduction to illuminating engineering.

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